

What is claimed is:

1 1. A system comprising:
2 a first module adapted to receive a set of queries and to provide a set of candidate
3 indexes for the set of queries, the first module adapted to eliminate one or more candidate
4 indexes based on one or more predetermined criteria; and
5 an optimizer adapted to generate a recommended index from the set of candidate
6 indexes.

1 2. The system of claim 1, wherein the set of queries comprises a set of SQL
2 statements.

1 3. The system of claim 1, wherein the optimizer is adapted to generate at least
2 another recommended index from the set of candidate indexes.

1 4. The system of claim 1, wherein the optimizer is adapted to use statistics.

1 5. The system of claim 4, wherein the statistics are based on a scan of a sample of
2 one or more tables, the sample less than all the rows of the one or more tables.

1 6. The system of claim 5, further comprising a user interface to receive an indication
2 of a user-specified size of the sample.

1 7. The system of claim 1, wherein the one or more predetermined criteria comprises
2 a threshold change rate, the first module adapted to eliminate one or more candidate
3 indexes having a change rate exceeding the threshold change rate.

1 8. The system of claim 7, wherein the first module is adapted to further eliminate a
2 candidate index that is a subset of another candidate index.

1 25. The method of claim 24, further comprising selecting the candidate index having
2 a lowest cost as the recommended index.

1 26. The method of claim 22, further comprising providing graphical user interface
2 screens to receive user input for selecting the recommended index.

1 27. The method of claim 26, wherein providing graphical user interface screens
2 comprises displaying an activatable item to perform workload identification to identify
3 the workload.

1 28. The method of claim 27, wherein providing the graphical user interface screens
2 further comprises displaying another activatable item to perform workload definition to
3 save the workload into a database.

1 29. The method of claim 28, wherein providing the graphical user interface screens
2 further comprises displaying another activatable item to perform index analysis to
3 analyze the candidate indexes to generate the recommended index.

1 30. The method of claim 29, wherein providing the graphical user interface screens
2 further comprises displaying another activatable item to validate the recommended index
3 in the database system.

1 31. The method of claim 29, wherein providing the graphical user interface screens
2 comprises displaying another activatable item to validate the recommended index in a test
3 system having an emulated environment of the database system

1 32. The method of claim 30, wherein providing the graphical user interface screens
2 further comprises displaying another activatable item to cause submission of a command
3 to the database system to create the recommended index.

1 33. The method of claim 26, wherein providing the graphical user interface screens
2 comprises displaying one or more reports relating to the recommended index.

1 34. The method of claim 33, wherein providing the graphical user interface screens
2 further comprises displaying a comparison of a cost using the recommended index with a
3 cost using an existing index.

1 35. The method of claim 33, wherein providing the graphical user interface screens
2 further comprises displaying cost improvement relating to use of the recommended index.

1 36. The method of claim 22, wherein invoking the optimizer is performed in a test
2 system separate from the database system.

1 37. The method of claim 36, further comprising importing environment information
2 of the database system into the test system to emulate the database system in the test
3 system.

1 38. The method of claim 37, wherein importing the environment information
2 comprises importing the environment information of a parallel database system having
3 plural access modules.

1 39. The method of claim 22, wherein invoking the optimizer is performed in the
2 database system.

1 40. An article comprising at least one storage medium containing instructions that
2 when executed cause a system to:

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3      receive a set of queries;

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4 generate a set of candidate indexes from the set of queries;

5 eliminate candidate indexes based on one or more predetermined criteria;

6 invoke an optimizer to perform cost analysis of the candidate indexes; and

7 use the cost analysis to select a recommended index for a database system.

1 41. The article of claim 40, wherein the instructions when executed cause the system
2 to eliminate a candidate index that has a change rate greater than a preset threshold.

1 42. The article of claim 41, wherein the instructions when executed cause the system
2 to eliminate a candidate index that is a subset of another candidate index.

1 43. The article of claim 40, wherein the instructions when executed cause the system
2 to apply a genetic algorithm to select the recommended index.

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